Diffuse knapweed Identification and Management

Diffuse knapweed (Centaurea diffusa) is a non-native biennial forb that reproduces solely by seed. A biennial is a plant that completes its lifecycle within two years. During the first year of growth, diffuse knapweed appears as a rosette in spring or fall. During the second year in mid to late spring – the stem bolts, flowers, sets seed, and the plant dies. Once the plant dries up, it breaks off at ground level and becomes a tumbleweed which disperses the still viable seeds over long distances. A prolific seed producer, diffuse knapweed can produce up to 18,000 seeds per plant. Therefore, the key to managing this plant is to prevent seed production. Diffuse knapweed can grow 1 to 3 feet tall, and is diffusely branched above ground. This gives the plant a ball-shaped appearance and tumble-weed mobility when broken off. Leaves are small, and are reduced in size near the flowering heads. Flowers are mostly white, sometimes purple, urn-shaped, and are located on each branch tip. Bracts that enclose the flowerheads are divided like the teeth of a comb, and are tipped with a distinct slender spine. Upon drying, the bracts become rough, rendering them injurious to the touch. Flowers bloom July through August. Seed set usually occurs by mid-August.

Diffuse knapweed tends to invade disturbed, overgrazed areas. Other habitats may also include rangeland, roadsides, riparian areas, and trails. It is a tough competitor on dry sites and rapidly invades and dominates disturbed areas. Once established, diffuse knapweed outcompetes and reduces the quantity of desirable native species such as perennial grasses. As a result, biodiversity and land values are reduced, and soil erosion is increased.

The key to effective control of Diffuse knapweed is to prevent the plant from flowering and going to seed. An integrated weed management approach dealing with Diffuse knapweed is highly recommended. There are many options of mechanical, chemical, and biological controls, available. Details on the back of this sheet can help to create a management plan compatible with your site ecology.

Diffuse knapweed is designated as a “List B” species on the Colorado Noxious Weed Act. It is required to be either eradicated, contained, or suppressed depending on the local infestations. For more information, visit www.colorado.gov/ag/csweeds and click on the Noxious Weed Program link or call the State Weed Coordinator at the Colorado Department of Agriculture, Conservation Services Division at 303-239-4100.

Identification and Impacts

Diffuse knapweed Identification and Management on dry sites and rapidly invades and dominates disturbed areas. Once established, diffuse knapweed outcompetes and reduces the quantity of desirable native species such as perennial grasses. As a result, biodiversity and land values are reduced, and soil erosion is increased.

The key to effective control of Diffuse knapweed is to prevent the plant from flowering and going to seed. An integrated weed management approach dealing with Diffuse knapweed is highly recommended. There are many options of mechanical, chemical, and biological controls, available. Details on the back of this sheet can help to create a management plan compatible with your site ecology.

Diffuse knapweed is designated as a “List B” species on the Colorado Noxious Weed Act. It is required to be either eradicated, contained, or suppressed depending on the local infestations. For more information, visit www.colorado.gov/ag/csweeds and click on the Noxious Weed Program link or call the State Weed Coordinator at the Colorado Department of Agriculture, Conservation Services Division at 303-239-4100.
**CULTURAL**
Establishment of selected grasses can be an effective cultural control of diffuse knapweed. Contact your local Natural Resources Conservation Service for seed mix recommendations. Maintain healthy pastures and prevent bare spots caused by overgrazing. Bareground is prime habitat for weed invasions.

**BIOLOGICAL**
The seedhead weevil (Larinus minutus) and the root weevil fly (Cyphocleonus achates) provide fair to good control when used in combination with each other. Expect to wait at least 3 to 5 years for the insects to establish and achieve optimum results. This is an option for large infestations. To obtain the insects, contact the Colorado Department of Agriculture, 970-464-7916.

**MECHANICAL**
Any mechanical or physical method that severs the root below the soil surface will kill diffuse knapweed. Mowing or chopping is most effective when diffuse knapweed plants are at full-bloom. Be sure to properly dispose of the flowering cut plants, since seeds can mature and become viable after the plant has been cut down.

**HERBICIDES**: The following are recommendations for herbicides that can be applied to range and pasturelands. Always read, understand, and follow the label directions. Rates are approximate and based on equipment with an output of 30 gal/acre. Please read label for exact rates. The herbicide label is the LAW!

<table>
<thead>
<tr>
<th>Herbicide</th>
<th>Rate</th>
<th>Application Timing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aminocyclopyrachlor + chlorsulfuron (Perspective)*</td>
<td>4.75-8 oz. product/acre + 0.25% non-ionic surfactant</td>
<td>Pre-emergence or from seedling to mid-rosette stage. IMPORTANT: Applications greater than 5.5 oz. product/acre exceeds the threshold for selectivity. DO NOT treat in the root zone of desirable trees and shrubs. Not for use on grazed or feed forage.</td>
</tr>
<tr>
<td>Aminopyralid* (Milestone)</td>
<td>5-7 oz./acre + 0.25% non-ionic surfactant</td>
<td>Spring at rosette to early bolt stage and/or in the fall to rosettes. Add 1 qt./acre 2,4-D or 3 oz. Perspective when treating in the bolting to flowering growth stages.</td>
</tr>
<tr>
<td>Clopyralid (Transline)</td>
<td>0.67-1.33 pints/acre + 0.25% non-ionic surfactant</td>
<td>Apply to spring/fall rosettes before flowering stalk lengthens. Add 1 qt./acre 2,4-D when treating in the bolting to flowering growth stages.</td>
</tr>
</tbody>
</table>

Note: *Not permitted for use in the San Luis Valley.

Additional herbicide recommendations for this and other species can be found at: [www.colorado.gov/AgConservation/CSUHerbicideRecommendations.pdf](http://www.colorado.gov/AgConservation/CSUHerbicideRecommendations.pdf)